

## Wind River Platform for Infotainment 3.0

The worldwide automotive market faces structural, financial, and process challenges that have never before occurred in this industry, threatening the very survival of many companies once viewed as industry stalwarts. Open source software represents a game-changing opportunity for automotive original equipment manufacturers (OEMs) to meet these challenges head-on and revolutionize their software development processes at the same time. Combining open source software with select software components and products from leading automotive and consumer electronics partners, Wind River solutions can deliver a verified platform, help you tailor it, and stand behind it for your entire in-vehicle infotainment (IVI) device life cycle.

### Open Source

OEMs and their suppliers seek to build a strategic, extensible platform that will serve as the foundation for next-generation IVI devices across model years. Open source software is now a viable alternative. Platforms based on open source components can do the following:

- Lower product development costs to boost margins via worldwide supported standard Linux distributions.
- Increase the rate of innovation and speed time-to-market to better compete with aftermarket and consumer personal navigation devices.
- Reduce the gap between proven automotive components and the consumer electronics with which they are integrated.
- Improve the differentiation between models to drive vehicle sales growth.

Open source components are not full commercial products and require integration and validation before they can be embedded in the dashboard of an automobile. OEMs and their Tier 1 suppliers look to a commercial vendor that will take these open source components and create a validated, future-proof product.

### Wind River's Solution

Wind River's solution approach is based on software systems integration that delivers integrated, tested, and validated IVI software systems, combining a platform foundation with scalable customization and consulting services. The solution approach tests and integrates open source and third-party components and Wind River-unique and semiconductor-unique software. Wind River adds world-class commercial business terms and software support offerings to complete the custom solution.

### Reference Platform

The reference platform is based on the latest GENIVI Alliance offering, which consists of Linux-based core services, enhanced and verified automotive middleware, and open application layer interfaces. The GENIVI Alliance, of which Wind River is a founding member, is a nonprofit organization of leading industry manufacturers and suppliers committed to developing

an open source platform for the industry. The GENIVI platform establishes a foundation of common software packages upon which automobile manufacturers and their suppliers can add their innovative features and services to create differentiated IVI devices. The GENIVI Alliance's current foundation software is based on MeeGo IVI 1.0, as is Wind River Platform for Infotainment 3.0.

Wind River's reference platform includes proprietary software from semiconductor hardware platform providers such as Intel that optimizes the chipset capabilities for the software platform. The reference platform also includes Wind River proprietary software that pre-integrates and validates open source and third-party components with the software stack.

### Pre-integrated Software Partners

Wind River has selected leading third-party independent software partners and pre-integrated their components and products to enhance the baseline software platform. These include Gracenote, SMSC, Cybercom, Fluendo, i-Anywhere, Datalight, SVOX, and Intel software. Complete development and distribution agreements with terms and conditions are integrated into Wind River's standard agreement, easing customers' sourcing processes and filling in gaps in the supply chain. Wind River carefully integrates, tests, and validates these components to reduce development cycles and costs. Wind River also includes solution components expected of commercial products such as documentation and use cases for the solution set.

### iPod Daemon

Platform for Infotainment offers a daemon that is an application in Linux that enables media applications to indirectly communicate with an iPod. The iAP (Apple iPod Control Protocol) implementation executes under a microcontroller or Wind River Hypervisor. The Linux iPod Protocol (LIP) handler allows communication between the daemon and the microcontroller. This is a unique solution for Linux-based IVI systems but still needs a system release by the Apple organization.

## Multi-silicon Approach

Platform for Infotainment 3.0 supports ARM and x86-based platforms, including the Beagle Board based on the Texas Instruments (TI) OMAP 3530 (Cortex A8) and the Intel Northville platform based on the Atom E600 processor. Other automotive-driven demonstrators are available on a variety of other platforms.

## Wind River Hypervisor

Wind River Hypervisor provides virtualization capabilities that enable the configuration of single and multi-core processors with multiple operating systems. Platform for Infotainment 3.0 is offered as a guest partition on Intel Atom processor-based platforms. Platform for Infotainment 3.0 can be configured to operate with one or more VxWorks guest partitions or with Wind River's iPod appliance solution, thus removing the need for additional processors and reducing hardware costs. An AUTOSAR OSEK guest partition solution will be offered in the near future.

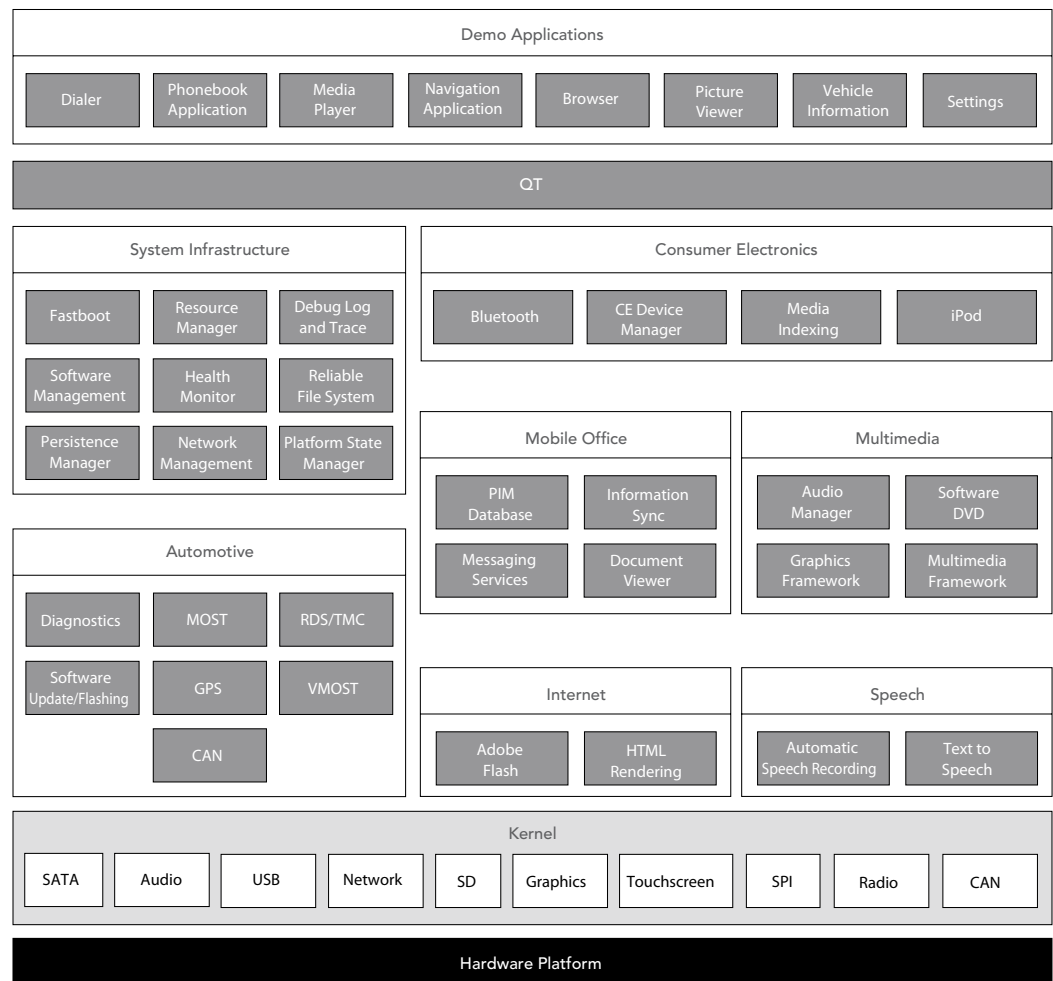
## Development Kit

The software product includes a software development kit (SDK) that begins with Wind River Workbench, the industry's leading device software development environment. Workbench offers intuitive Eclipse-based views and perspectives that help developers find and fix problems in complex code early in the development cycle. Workbench accelerates application development, helps reduce device code complexity, and improves code quality. Using native Eclipse integration capabilities, Workbench enables developers to take advantage of homegrown or commercial plug-ins for application design, development, and test, to further speed application development and reduce time-to-market.

## Automated Software Testing

Wind River Framework for Automated Software Testing (FAST), an optional framework for automated system and device testing, can cut development costs, improve quality, and reduce testing cycle time. The framework acts as a meta-test execution tool for commercial Linux platforms such as Wind River Platform for Infotainment. It can easily be integrated with proprietary test suites, test suites from third parties, or open source test suites.

FAST can help determine compliance, measure performance, and prove stability of IVI devices based on Wind River Platform for Infotainment. The testing framework accepts the results of a build, executes your selection of hundreds of Wind River-authored tests and tens of thousands of existing scripts, archives the relevant test artifacts, and provides the results in a single report, all in a fully automated process. Wind River leverages as many open source and existing test frameworks as possible so testing is comprehensive, without sacrificing time-to-market.



Wind River Platform for Infotainment 3.0 system architecture